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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/756,781	01/14/2004	Yun Zhang	105297-1033	3117
7590 Eugene F. Derenyi Stikeman Elliott 1600-50 O'Connor Street Ottawa, ON K1P 6L2 CANADA		11/15/2007	EXAMINER SHIKHMAN, MAX	
			ART UNIT 2624	PAPER NUMBER
			MAIL DATE 11/15/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/756,781	Applicant(s) ZHANG, YUN	
	Examiner Max Shikhman	Art Unit 2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 12 September 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 4 and 6 is/are rejected.
- 7) ☐ Claim(s) 2, 3, 5, 7-12 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                 | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date: _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                        | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date: _____ | 6) <input type="checkbox"/> Other: _____  |

***Response to Amendment***

1. Applicants' response to the last Office Action, filed 09/12/2007 has been entered and made of record.
2. Applicants' amendment has required new grounds of rejection. New grounds rejection are therefore presented in the Office Action.
3. Applicant's arguments have been fully considered but are moot in view of the new ground(s) of rejection.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 1 rejected under 35 U.S.C. 103(a) as being unpatentable over

Limberg US-PAT-NO: 5467145, "Circuitry for enhancing detail in color video signals" in view of

Dickson US-PAT-NO: 6160902, "Method for monitoring nitrogen status using a multi-spectral imaging system".

**( ) Regarding Claim 1:**

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1.(Currently Amended). *A method for improving (Title. Col 5 line 18 "detail enhancement ") the colour (Fig. 3) of a natural colour image (Fig. 3: R,G,B image) comprising the steps of*

*generating a greenness band (Fig. 3: 20+5 generate a LPF of a green band) from a multispectral image including blue, green, red (Fig. 3: R,G,B) and adjusting (Fig 3: 80) the green band (G) using the greenness band. (Fig. 3: 20+5 generate a LPF of a green band)*

Limber discloses everything as described above except, *near infrared band*.

Dickson discloses *near infrared band* in Fig3: 72. Image processor 22 enhances multispectral image 76 (col 8 line 37). As Dickson discloses, it is desirable to detect NIR band for crop identification (Col 3 line 11). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use Limber's method of detail enhancement in Dickson's Image processor 22, to detail-enhance a color image.

6. Claim 4 rejected under 35 U.S.C. 103(a) as being unpatentable over Limberg US-PAT-NO: 5467145 and Dickson US-PAT-NO: 6160902 and further in view of Burky US 20040075667 A1.

**() Regarding Claim 4:**

4.(Currently 'Amended) The method for improving the colour of a pan-sharpened natural colour image comprising the steps of  
*generating a greenness band (Fig. 3: 20+5 generate a LPF of a green band)*

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*including blue, green, red and (Fig. 3: R,G,B)*

*adjusting (Fig 3: 80) green band using the greenness band.*

Limber discloses everything as described above except, *near infrared band* and *pan-sharpened image bands*.

Dickson discloses *near infrared band* in Fig3: 72. Image processor 22 enhances multispectral image 76 (col 8 line 37). As Dickson discloses, it is desirable to detect NIR band for crop identification (Col 3 line 11). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use Limber's method of detail enhancement in Dickson's Image processor 22, to detail-enhance a color image.

Burky discloses [0004] [0006] pan-sharpened satellite imagery as a low-cost alternative to full color imagery. It is desirable to use a pan-sharpened satellite image for crop identification. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use Burky's pan-sharpened image in the combined method of Limber and Dickson, to enhance details of a pan sharpened image of crops.

7. Claim 6 rejected under 35 U.S.C. 103(a) as being unpatentable over Limberg US-PAT-NO: 5467145 in view of Burky US 20040075667 A1.

**() Regarding Claim 6:**

6.(Currently Amended) *A The method for improving the colour of a pan-sharpened natural colour image comprising the steps of*

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*generating a greenness band* (Fig. 3: 20+5 generate a LPF of a green band)

*adjusting* (Limberg. Fig 3: 80) *green band (G) using the greenness band.*

(Fig. 3: 20+5 generate a LPF of a green band)

Limber discloses everything as described above except, a *panchromatic image* and a *pan-sharpened red band*;

Burky discloses, a pan-sharpened natural colour image (46+48 in Figure 2);  
a panchromatic image (44,48 in Figure 2) and a pan-sharpened red band; (50 contains a red band);

Burky discloses [0004] [0006] pan-sharpened satellite imagery as a low-cost alternative to full color imagery. As Burky discloses, it is desirable to fuse a high resolution panchromatic image with low resolution natural color image to produce a high resolution natural color image. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use Burky's pan-sharpened image in the method of Limber, to enhance details of pan sharpened images of crops.

#### ***Allowable Subject Matter***

8. Claims 2, 3, 5, 7-12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. The following is a statement of reasons for the indication of allowable subject matter: the prior art does not teach their respective mathematical formulas, along with other limitations in the claims.

***Conclusion***

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Cacciatore (US-PAT-NO: 6417891) discloses, "Color modification on a digital nonlinear editing system." Denny (US-PAT-NO: 5479255) discloses, "Multispectral signature extraction technique".

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Max Shikhman whose telephone number is (571) 270-1669. The examiner can normally be reached on Monday-Friday 8:30AM-6:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, JINGGE WU can be reached on (571) 272-7429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Max Shikhman

11.12.2007

JINGGE WU  
SUPERVISORY PATENT EXAMINER

